

Reed C. ROLLINS*: *Cusickiella*, a new genus of the Cruciferae**R.C. ロリンズ*: アブラナ科の一新属 *Cusickiella***

In his treatment of the Cruciferae in *Die Pflanzenfamilien*, O.E. Schulz (1936) described the genus *Cusickia*, attributing it to Asa Gray (1882). Also he had earlier referred to *Cusickia douglasii* Gray, excluding it from *Draba* in *Das Pflanzenreich* (1927). But Gray did not describe *Cusickia*. He merely mentioned that he had distributed some specimens under that name. What he did was to describe a new species, *Braya oregonensis*, based on specimens collected by Cusick, the same ones distributed as *Cusickia*. However, as shown by the holotypes, and as has long been known, *Braya oregonensis* is the same species as the earlier *Draba douglasii* Gray (1867). The first generic description of *Cusickia*, as this name refers to the plants involved, was by Schulz in *Die Pflanzenfamilien* (loc. cit.). But by the time it might have been legitimized, the name *Cusickia* was preoccupied by *Cusickia* M.E. Jones (1908) of the Umbelliferae.

When I described *Draba quadricostata* (Rollins 1946), I suggested that this was a close relative of *Draba douglasii* and argued that both species should be retained in *Draba*. Since then, with considerable new material to work with, I have become increasingly dissatisfied with the retention of these two species in *Draba*. One source of the difficulty is that the seeds of these species have the cotyledons in the incumbent position with respect to the radicle whereas in *Draba*, as a whole, the cotyledons are accumbent. Also, the seeds of these

* Gray Herbarium of Harvard University, Cambridge, MA 02138, U.S.A.

It has been my pleasure and good fortune to have known Professor Hiroshi Hara for nearly half a century. In 1938, Dr. Hara, then a Lecturer at the Imperial University of Tokyo, came to the Gray Herbarium as a Research Associate. His purpose was to study the relationships of the floras of eastern Asia and eastern North America. This subject, originally studied by Asa Gray, with well-known far-reaching results, was opened again, but this time with the starting point in Asia rather than America. Dr. Hara spent more than a year in Cambridge, and as an advanced graduate student at Harvard, I was privileged to be with him many times. Our friendship and botanical relationships were often renewed over the years. For example, we were together as fellow officers of the International Association for Plant Taxonomy and as officers and members of the committees of several International Botanical Congresses. I have always had the greatest respect for Professor Hara. He was an excellent botanist, a real gentleman, and a true scholar of the highest caliber. His insights into many facets of the botanical sciences are appreciated throughout the world.

** Contribution in honor of the late Dr. Hiroshi Hara.

species are very large (2–3 mm long), ovate, without grooves, and are essentially uncompressed or only slightly so. In contrast, the seeds of *Draba* are smaller (rarely up to 2 mm long), oblong and often tapered toward each end, usually grooved and somewhat compressed. Although in both species of *Cusickiella* there are four ovules in each silique, usually only one develops, resulting in a single seed per silique. In most instances the other ovules abort. In *Draba* there are a few species with 4 ovules and as few as 2 seeds in each silique, but in most the number ranges from 6 upward. The siliques of *Cusickiella* are little compressed and the single seed (rarely two) fills nearly the entire fruit cavity. Furthermore, the replum and valve walls are thicker and more leathery than those of most *Draba*. The thickened replum of *C. douglasii* undoubtedly was the feature that led Gray at one point to refer this species to *Braya*. A thickened replum is characteristic of that genus.

The presence of deep vertical rhizomes in *Cusickiella douglasii* is a distinctive feature not shared by any species of true *Draba* known to me. Unfortunately, the underground parts of *C. quadricostata* have not been sufficiently investigated in the field to know whether rhizomes are present or not. The herbarium material available is also not conclusive on this point.

To be sure, the plants of *Cusickiella* are *Draba*-like in general habit and in many characteristics, but they do represent a discordant element in *Draba*. It is well known that the cotyledon position with respect to the radicle is not an infallible taxonomic character in the Cruciferae. Some species, such as *Lepidium virginicum* L., have both incumbent and accumbent cotyledons. But like all characters, this one has to be weighed in terms of the relationships involved. In *Draba*, accumbent cotyledons are consistent throughout the many species of the genus. For this reason, it is more significant and carries more weight in terms of generic delimitation than in *Lepidium*, where the cotyledon position is inconsistent.

The generic status of *Cusickiella douglasii* (as *Draba douglasii*) was discussed in some detail by Payson & St. John (1930). Their conclusion was that despite the unique features possessed by this species, it should be retained in *Draba* where Gray originally placed it. But they did not mention the cotyledon position which is so crucial to the placement of the species and *Cusickiella quadricostata* had not yet been discovered. In my view, having two related species with the same distinctive characters, rather than one species

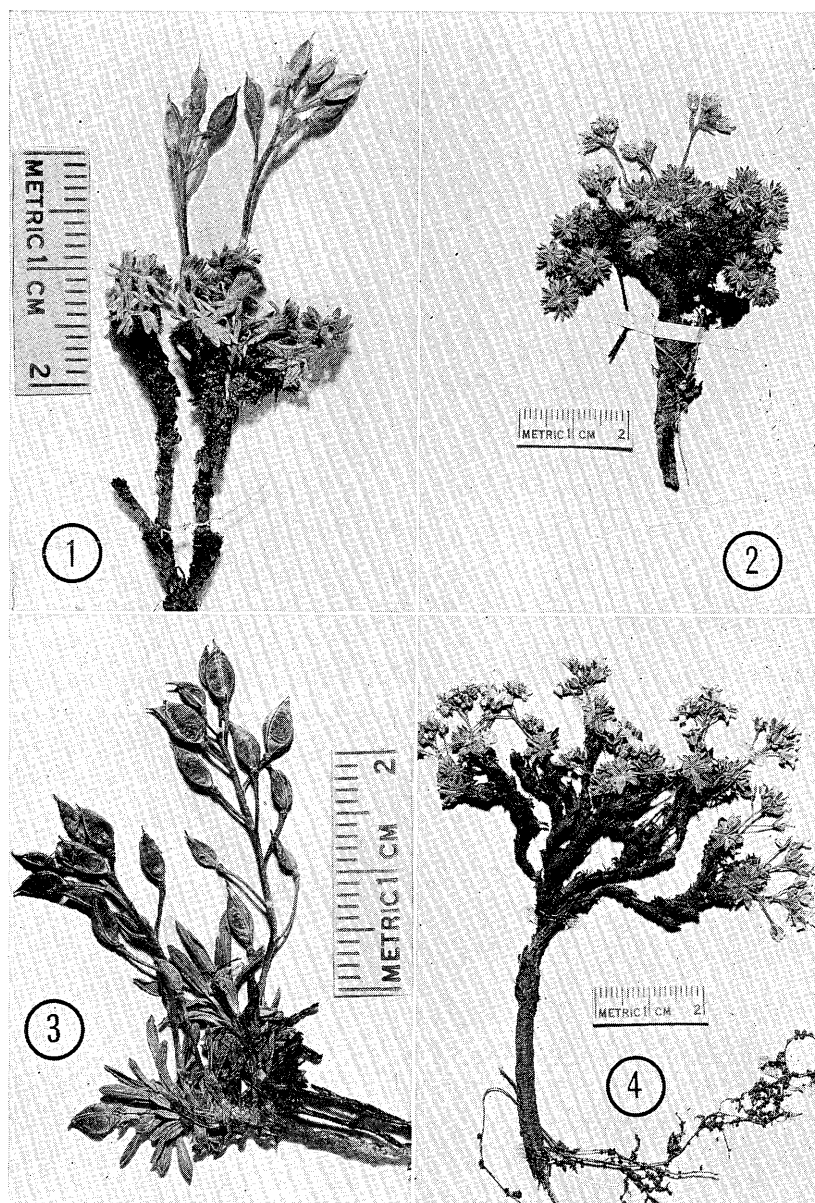


Fig. 1-4. Flowering and fruiting plants of *Cusickiella*. 1: *C. quadricostata*, Tiehm 8128 with Lavin (GH). 2: *C. quadricostata*, R.C. & K.W. Rollins 81135 (GH). 3: *C. douglasii*, Holmgren & Reveal 1161 (GH). 4: *C. douglasii*, Cronquist 8640 (GH).

alone, strengthens the need for a separate genus to properly express their taxonomic relationships to other genera of the family.

Simple trichomes predominate in *Cusickiella* but in *C. quadricostata* there is an admixture of usually large simple and smaller branched trichomes, particularly on the leaves, stems, and pedicels.

Cusickiella Rollins, gen. nov.

Herba perennis caespitosa humilis, caudicibus ramosis, foliis imbricatis integris congestis oblongis vel oblanceolatis nonpetiolatis, caulibus scapiformibus vel bracteatis, inflorescentiis racemosis, sepalis oblongis nonsaccatis, petalis albis vel plus minusve flavis spathulatis vel lingulatis nonunguiculatis, pedicellis superne expansis, siliquis ovatis glabris vel pubescentibus, 4-ovulatis, stigmatibus integris, seminibus ovatis vel late oblongis noncompressis bruneis 2-3 mm longis, cotyledonibus incumbentibus.

Low caespitose perennials with deep vertical rhizomes or taproots and highly branched caudices; caudex branches usually subterranean, terminated by clusters of bluish-gray leaves; leaves entire, oblong to oblanceolate and lacking petioles; flowering stems leafless or only with leaf-like bracts subtending the lower pedicels; sepals nonsaccate, subequal, glabrous or pubescent; petals spatulate to lingulate, erect, not unguiculate, white or yellowish; stamens tetradynomous; glandular tissue continuous at base of paired stamens and around base of single stamens; pedicels divaricately ascending, greatly enlarged at the receptacles; siliques sessile or nearly so on a broad base, usually ovate in outline, uncompressed or only slightly compressed toward margins and apex when mature, valves rounded or keeled; styles unexpanded at apex; stigmas entire; ovules 2 per locule, attached near apex of replum with short stout funiculi; seeds brown, plump, ovate to broadly oblong, wingless, one or two per silique, 2-3 mm long; radicle acute and equalling or exceeding cotyledons; cotyledons incumbent.

Type species: *Cusickiella douglasii* (Gray) Rollins [*Draba douglasii* Gray].

Key to the species

- Lower pedicels of the inflorescences subtended by leaf-like bracts; back of the valves with a prominent ridge; leaves 2-4 mm long, midvein obscure; sepals and petals yellowish.....*C. quadricostata*.
Lower pedicels of the inflorescences bractless; back of the valves rounded, leaves 5-12 mm long, midvein prominent; petals white*C. douglasii*.

Cusickiella douglasii (Gray) Rollins, comb. nov., based on *Draba douglasii* Gray, Proc. Amer. Acad. Arts 7: 328, 1867.

Syn.: *Cusickia douglasii* (Gray) O.E. Schulz, Pflanzenreich **IV-105**: 341, 1927, not *Cusickia* M.E. Jones, Contr. W. Bot. 12: 39, 1908; *Braya oregonensis* Gray, Proc. Amer. Acad. Arts 17: 199, 1882; *Draba crockeri* Lemmon, Bull. Torrey Bot. Club 16: 221, 1889; *D. douglasii* var. *crockeri* (Lemmon) C.L. Hitchc., Univ. Wash. Publ. Biol. 11: 91, 1941.

Cusickiella douglasii grows in a wide range of habitats as suggested from notations on labels of various collections: windswept rocky ridges and slopes, granitic rock scree, loose volcanic hillsides, red barren hills, gravelly hillsides, decomposed granite, rocky flats and serpentine crests. Responses of populations growing in these differing environments show a range of variation that encompasses the supposedly distinctive features of var. *crockeri* as given by Hitchcock (loc. cit.). Therefore, var. *crockeri* appears not to have a real existence as an independent taxon. The species occurs on hills, high ridges, and lower mountain areas from Idaho and northwestern Utah to southern California, north to Washington, U.S.A.

Cusickiella quadricostata (Rollins) Rollins, comb. nov., based on *Draba quadricostata* Rollins, Contr. Dudley Herb. 3: 366, 1946.

Habitats of this species are: slopes with dwarfed sagebrush, rocky flats, clayey places in piñon-juniper woods, decomposed granite, and among rocks of windswept ridges and saddles. It occurs in the Bodie Hills region of Mono County, California, and in adjacent Lyon and Mineral counties, Nevada, U.S.A.

Literature Cited

Gray, A. 1867. Characters of new plants of California and elsewhere, principally collected by H.N. Bolander in the state geological survey. Proc. Amer. Acad. Arts 7: 327-401. — 1882. Contributions to North American botany XII. Proc. Amer. Acad. Arts 17: 163-230. Jones, M.E. 1908. New species and notes. Contr. W. Bot. 12: 39-40. Payson, E.B. & H. St. John 1930. The Washington species of *Draba*. Proc. Biol. Soc. Wash. 43: 976-122. Rollins, R.C. 1946. Some new or noteworthy North American Cruciferae II. Contr. Dudley Herb. 3: 366-373. Schulz, O.E. 1927. Das Pflanzenreich, *Draba* et *Erophila*, **IV-105**: 1-396. — 1936. Cruciferae. In A. Engler, Die natürlichen Pflanzenfamilien **17b**: 227-658.

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北アメリカに分布するイヌナズナ属の2種に基づいて新属 *Cusickiella* を設立した。新属は外形的にもまた多くの形質でもイヌナズナ属に類似するが、特に重要な点は幼根に対する子葉のつき方が異なることである。

○若き日の原 寛博士の日記（金井弘夫 編） Hiroo KANAI (ed.): Botanical activities of the late Dr. Hiroshi Hara from his diaries in 1927, 1928 and 1930

原寛博士の学生時代の日記が残されている。現在みつまっているのは大正12, 14年, 昭和2, 3, 5年と断片的であるが, 博士の几帳面な性格を反映して, 当用日記に1~2行ではあるが, 毎日ほとんど欠かさず記されている。昭和に入ってから, 植物研究に生活の方向づけが決まってきたことがうかがわれ, ほとんど連日「勉強した」, 「標本を整理した」という言葉でしめくくられている。記事は事実の記述に限定され, 意見や感想はみられず, 「じつに嬉しかった」, 「痛快であった」という記述がたまにあるのみである。前者は自己の植物の新発見について用いられ, 後者は学校の成績で一番をとったときに用いられている。大学入学以前に, すでに大人を相手に植物の指導をしていたことがわかる。博士は当時植物同好会には所属しておらず, 川村清一博士の自宅で教示をうける以外は独力でその水準に達していたことは, 若くして志をたてて研究に集中した勉学の成果を思わせる。採集行はきわめて機動的で, 交通機関を有効に利用して, 今日と同様なスピードで精力的に移動しているのが目についた。また年末にはその年の所感と採集行の一覧表および自己の重要な発見植物の表が作られている。大学時代の日高山脈調査の記録などは, 残念ながらみつからない。

植物研究以外に博士は学生時代にはいろいろなゲームやスポーツを楽しみ, いずれも好成績を取っていたことが随所に記されている。スポーツとしてはテニスが得意だったほか, ビンポンもこなしている。相撲興行の結果は必ず日記に記されており, 毎日観戦にでかけていることも多い。ゲームでは麻雀は得意とするところで, そのほか花札, 将棋, 五目並べ, トランプなどもしばしば登場する。

以下は日記から植物研究に関するトピック的な部分を抜粋したものである。公表を許された原一二美夫人に感謝の意を表する。

昭和2年(1927)16才 4月7日 明日より中等科第5学年に入ることになった。(注: 東京高等師範学校附属中学校より学習院転校。)

9月6日 今年およびその以前に採集したる腊葉の整理を行ふ。

9月13日 今日で略腊葉整理ができ, 新たにこしらへた腊葉450枚に達した。(続く)